



MISSOURI DEPARTMENT OF TRANSPORTATION
15', 3-SECTION FLEX-WING HYDRAULICALLY POWERED ROTARY MOWER SPECIFICATIONS

GENERAL - The intent and purpose of this specification is to establish minimum quality, safety and performance standards for a 15', 3-section flex-wing hydraulically powered rotary mower providing an optional cutting swath of 15' without evidence of streaking. The intent and purpose of this specification is also to describe a mower with engineering and design that will assure trouble-free Highway right-of-way and other large areas of mowing with a minimum amount of down time.

MOWER FEATURES:

The mower shall be rotary, 3-section, flex-wing style and constructed from heavy-duty 7-gauge steel.

Deck design shall be easy clean style with a double-deck center section for durability.

The mower shall feature an adjustable cutting height of 1-1/2" – 14-1/2".

Side skirts shall be bolt-on, replaceable, and constructed to a minimum of 1/4" x 10 1/2" thick.

Overall width of the mower, with wings unfolded, shall be 186".

Overall length of the mower shall be 183".

Overall height of the mower shall be 85-1/2"

Overall transport width, with wings folded, shall be 96".

Overall cutting width of the mower shall be 180".

Replaceable, heat-treated skid shoes shall be bolt-on under each wing side skirt.

(6) replaceable, puncture resistant foam-filled airplane tailwheels shall be featured as standard equipment

Wheel spacing shall be 50" from center outside and 25" center inside.

The mower shall cut up to 3-1/2" grass, weed, and brush material.

The mower shall feature a spring-cushioned axle shock absorber.

A hydro-mechanical level-lift system shall be featured for uniform cut.

BLADE CARRIER AND BLADES:

The blade carrier shall be constructed of 7-gauge hardened steel reinforced with a 1" thick cross-bar weldment for durability.

(2) free-swinging updraft cutting blades made of 1/2" thick x 4" wide, heat-treated, alloy steel and weighing 15.8 lbs. (Center) and 12.5 lbs. (Wings) each shall be featured as standard on wing and center blade carriers.

Blade length, from pin center to tip, shall be 22-1/2" (Center) and 19-1/2" (Wings) and shall have a blade overlap of 6".

Blade spindles on both wings and center section shall be 2-3/4" in diameter and run at the following speeds:



Blade Spindle Speed:

<u>Center</u>	<u>Wings</u>
864	1,045

Center Blade Tip Velocity:

<u>FPM</u>	<u>MPH</u>
16, 286	185

Wing Blade Tip Velocity:

<u>FPM</u>	<u>MPH</u>
16,415	186

**Ratings based on actual field performance.

POWER:

PUMP:

Two-section pump with one section furnishing flow to the center motor and the other section furnishing power to the wing motors in series.

PUMP DRIVE:

Tractors PTO shaft turns speed changer turning the pump.

The speed changer should have an oil bath and breather plug.

The tractor's PTO lever shall control the pump rotation through speed changer to take 540-RPM to 2160 RPM at the pump.

HYDRAULICS SYSTEM:

Front-mounted hydraulic tank with a capacity of 35 gallons.

Flex hoses connect the tank to the pump.

MOTOR:

Hydraulic, gear-type motors, one for the center section and one for each wing

Relief valves for the motors set at 3000 PSI for the center and 3000 PSI for wings.

Motors rated at 63 HP for center and 58-HP for wings

Must have a splined shaft that fits a splined socket in the spindle.

BEARINGS:

Tapered roller bearings, top and bottom, running in oil bath. Needs seal at the bottom of the housing and a filler hole located at the top of the housing.

HOSES/DRIVESHAFT:

1" hoses on center section and wings

4-spiral sired SAW100R12 pressure hoses with a 16,000-PSI minimum burst pressure.



SAE 100 R4 suction hoses with spring guard

MOUNTING:

The mower shall be attached to the rear of the tractor using a self level-lift drawbar hitch design.

The tongue weight shall be approximately 700 lbs. when mowing and 1,500 lbs in transport.

TRACTOR REQUIREMENTS:

The mower shall be mounted on a tractor featuring a minimum horsepower rating of 50 HP.

SAFETY FEATURES:

The mower shall feature a safety lock for additional protection during transport.

The mower shall feature double-row chainguards on front and back as standard equipment.

No moving parts above the deck.

An automatic shutoff system shall engage when a wing is raised above a 45 degree angle from the ground.

COLOR - Color to be manufacturer's standard over a prime coat.

NOTE: Complete unit must be manufactured in accordance with the latest adopted OSHA or SAE Standards and amendments thereto.

The Missouri Highways and Transportation Commission reserves the right to waive technicalities and to reject any or all bids and no bid is final until formally accepted by the Commission.